

### REMARKS

Claims 1, 3-8 and 10-20 have been rejected in view of Brown, U.S. Patent No. 6,148,673 as obvious under 35 U.S.C. § 103(a). Applicant respectfully traverses this rejection for the following reasons.

Brown discloses a differential pressure sensor typical of the prior art sensors that use a diaphragm or sensor die 30 as Brown describes it. Brown subjects the die 30 to a first pressure on one side of the die, through an inlet or port 20. Brown also subjects the same die 30 to a second pressure through inlet or port 22. The stated purpose of Brown is to mount the die 30 without stress. The hostile pressure from port 20 only contacts one side of the die. The second pressure from port 22 only contacts the other side of die 30. The die is of uniform thickness and there is no hint of a suggestion that the die might have a thin portion and a thick portion. The transducer 32 is mounted in the middle of die 30. The device functions because the hostile pressure is kept from the transducer.

In contrast, Applicant has claimed a sensor using a diaphragm which has two separate portions and the first portion has a thickness that is less than the thickness of the second portion. The transducer is mounted on the first portion, as described and claimed in the application as filed. Thus it measures the deflection of the first portion that is thinner than the second portion. Applicant has amended the independent claims to emphasize that the measurement of the pressure is done on the thin portion. See page 9 of the specification as filed where it describes the function of the thin portion of the diaphragm.

The Examiner has admitted that Brown does not teach a thickness of the first portion being less than a thickness of the second portion. Applicant respectfully urges that Brown does not even disclose more than one portion of the die. All that is taught is that the die has two sides. The Examiner has said that "Lacking any criticality it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the dimensions of the diaphragm portion in whatever sizes and thickness parameters that are the

most efficient....” First, that is not true. Nowhere is there even a hint that one might change the thickness of a diaphragm, then measure the pressure on the thinner portion of the diaphragm. Having two sides is not in any way suggestive of something having two thicknesses. Second, it is critical to have a thin portion that is very sensitive to pressure changes and it is critical to have a thicker portion in order to concentrate the pressure change. Page, 9, beginning at line 7 of the instant specification, states as follows:

The difference in thickness of the portions 104, 106 of the diaphragm 102 helps concentrate stress in the thinner first portion 104, such that the thinner first portion 104 obtains a larger deflection for a given change in pressure. The larger deflection, in turn, causes the transducer 12 to produce a larger output signal, whereby the sensitivity of the pressure sensor assembly 10 is increased.

Clearly this demonstrates a critical feature that has not been known in the art. Clearly Applicant is not merely making design changes for known reasons depending on the intended use of the diaphragm. It is respectfully submitted that the rejection should be withdrawn in view of the foregoing remarks, and allowance of the claims should be granted. Favorable consideration is urged.

Claims 4-6, 11-13, and 17-19 have also been rejected as obvious over Brown, since Brown does not teach the housing to be cylindrical or tubular. The Examiner has said that it would be obvious to mold whatever shape is necessary. Applicant agrees that the shape is a design feature. However, for the reasons stated above, Brown does not teach or suggest or make obvious in any way the critical feature of concentrating pressure change in a thin portion of a diaphragm by having a thicker portion, Reconsideration and withdrawal of the rejection is earnestly solicited.

With respect to claims 7, 14 and 20, the Examiner has stated that the recited groove is not taught in Brown but that it would be obvious to provide an isolation feature because Brown teaches a seal. Applicant does not believe that a seal to keep out a hostile environment is an equivalent of providing a stress relief feature. Page 10, lines 6-9 state that the invention “includes a stress isolation groove 202 that helps isolate the diaphragm 102 from any mounting/external

stresses produced by the connector 22 and the housing 16 of the pressure sensor assembly 10." This is not an obvious variation on a seal against hostile gas. Withdrawal of the rejection is requested.

Claims 2 and 9 have been rejected as obvious over Brown taken with Monk et al. U. S. Patent No. 6,401,545. Monk is cited as showing MEMS transducers since Brown does not. Neither Monk nor Brown teach the critical feature of the present invention as claimed herein and discussed above. Since Monk does not remedy the deficiencies of Brown, this rejection should be withdrawn.

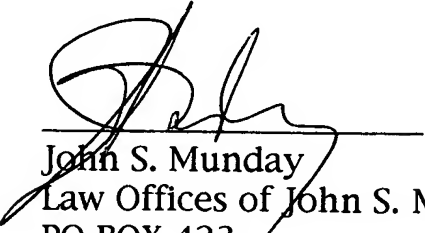
If the Examiner considers this case ready for conclusion, other than by allowance, he is respectfully requested to call Applicant's attorney at the number listed below. Favorable action is earnestly solicited.

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Respectfully submitted,  
Brian D. Lewis

By his Attorney

Telephone:  
(763) 444-8296  
FAX  
(763) 444-8781

  
John S. Munday  
Law Offices of John S. Munday  
PO BOX 423  
Isanti, MN 55040

Registration Number 22,636